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ABSTRACT

Children with histories of high and low exposure to television (and the violence therein) were exposed to a moderately violent film. Measures of autonomic response (skin conductance and blood volume pulse amplitude) were taken before and during their exposure to the violent film. Over both measures and in another replicated study, the high TV exposure subjects were found to be significantly less "aroused" autonomically, suggesting a limited but still definite and measurable desensitization to filmed violence. Since the subjects had had no, or no recent, exposure to the particular film, the results suggest the possibility of a generalizing effect for the desensitization that occurred.
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The Desensitization of Children to Television Violence¹

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University of Utah

A number of hypotheses have been advanced trying to explain or understand the phenomena of uninvolved citizenry when their fellows have been assaulted or attacked within range of their helping. The most publicized recent event dealt with Kitty Genovese, a Brooklyn girl who was assaulted, raped and murdered in a New York apartment complex over a period of time in excess of a half hour. A later investigation revealed that more than 40 people were aware of her distress and need for help but no one came to her aid directly or indirectly (such as anonymously calling for police help by phone). The Mai Lai incident wherein American soldiers killed a number of Vietnamese civilians represents only the most publicized event of this kind which apparently has occurred on a more minor scale on other occasions during the Vietnam war. Trial transcripts suggest a lack of concern by many of the American soldiers involved in these killings of unarmed civilians which included children.

The work in systematic desensitization by such investigators as Wolpe, Bandura, and Eysenck might suggest that where people have been exposed to a great deal of prior violence stimuli either directly or vicariously as in newspapers, movies, TV programming and other media, there may be a kind of psychological blunting, "turning off" or "tuning out" of the normal emotional responses to these types of events. This might represent possibly a gross type of desensitization or deconditioning to violence stimuli.

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The work of Albert Bandura and his associates, Hanratty and others in the social learning field would suggest that through the process of modeling and imitative learning people and their behavior can be influenced by violence witnessed on the TV or movie screen. The more recent work of Liebert (1971) and others in a series of studies financed by the Surgeon General's office suggests for the first time a causal link between witnessed violence and an observer's subsequent aggressive behavior.

If we combine the effects of desensitization which could potentially have the result of reducing the effects of conscience and concern with the effects of modeling which provides (through our media entertainments) the explicit cognitive formulations and mechanics for committing violence, it may not be too surprising to see major increases in acts of personal aggression, especially among the young who have the highest media and TV exposure and are the primary audience of commercial motion pictures. It might also be noted that 96% of all American homes contain at least one TV set (1970 Census) and that it has been fairly well documented that children become "purposeful TV viewers" by the age of three, meaning that they have established patterns of favorite programs and viewing times (Murray, 1970). Various surveys have shown most children watch television from 14-49 hours a week, depending on age and socioeconomic level (Nat'l Commission on the Causes and Prevention of Violence, 1969). This means that children spend more time in front of a TV set than in front of teacher during a year's time. In fact in just the pre-school years alone the child spends more time watching TV than he would in the classroom during four years of college (Looney, 1972). Looney also notes that by the age of 14 the average child has witnessed 18,000 murders on TV. This would be in

addition to those seen or read about in newspapers, magazines and in commercial motion pictures, plus all other assorted types of violence viewed in the various media. The research of Gerbner, Eeley and Tedesco (1969) suggests an increasing incidence of violence in TV prime time shows.

The U. S. Justice Department's Unified Crime Report for the decade of 1969-70 suggests that crimes of violence in the United States have been accelerating in frequency at nearly 14 times the rate of population growth. Another related datum is that the incidence of homicides in the U. S. is 10 times greater per capita than in the Scandinavian countries. Striking differences also exist when comparisons are made with other western European countries. One major difference in the Scandinavian countries is that violence has, at least until very recently, officially and unofficially been restricted to public entertainments and media, especially on TV and in films.

If we consider the notion of desensitization to violence plus the effects of media modeling on violence over a period of many years in our public entertainments and on the battlefield, it would not be too difficult to see how some American soldiers might impassively and with little conscience kill civilians who were loosely identified with the enemy and how some adolescents or adults might also similarly participate in violent acts or behaviors as civilians in the U. S.

In this research we have addressed ourselves to the questions, "What physiological effects are brought about within the child who is constantly exposed to violence on TV?" That is, is there a measurable physiological difference in emotional response (e.g., of the autonomic nervous system)

to filmed violence between children who are high exposure TV viewers and children who are low exposure TV viewers? In other words, do children in real life become desensitized to violence. The research of Lazarus and associates is relevant here. They exposed their subjects to films of a primitive tribal ritual involving painful and bloody genital mutilations. They found that viewers became increasingly less emotionally responsive with repeated observations of this type of scene, suggesting a progressive desensitization to a specific filmed stimulus. Zuckerman (1971) in reviewing a number of studies correlating GSR, pupillary response and other physiological responses to witnessing erotic photos and movies has noted a "habituation" or desensitization effect after repeated exposure to this type of stimulus.

It would be the hypothesis of the authors that prolonged exposure to violence stimuli, as depicted on TV and movies, not necessarily coupled with relaxation and counterconditioning, will reliably produce desensitization.

The use and utility of psychophysiological measures in social-psychological research has been well supported in the literature. Shapiro and Crider (1969) state, "Although the particular forms of construction of electrodes and energy transducers, the characteristics of physiological preamplifiers and the recording medium may take on different appearances, the data are in essence comparable from one laboratory to the next."

As to the question of whether or not a subject will respond emotionally and physiologically to witnessing the stress, anxiety or dilemmas or violence occurring to some other individual, "the occurrence of the same type of autonomic response in a subject and in the person he is observing" was first used as a definition of empathy by Berger (1962). He reported

that subjects observing another person take an electric shock simultaneously show a galvanic skin response, this being the empathic reaction (Shapiro & Crider, 1969). Skin resistance has been shown as an effective autonomic measure in response to some immediate stimulus and gives a level of response which not only varies from individual to individual but also within individuals from time to time. It also appears to reflect general, long term conditions which have arousing effects upon the person (Lacey & Lacey, 1958). It has further been shown (Lazarus, Speisman, Mordkoff & Davison, 1962) that autonomic reactivity reflects highly significant increases in response under a filmed stressor condition as compared with a control.

Method

Subjects Phase I

Eighty male children between the ages of 5 and 12 were divided into two groups on the basis of (a) having witnessed TV four or less hours per week for the preceding two years, and (b) having witnessed TV 25 hours a week or more for the previous two years. Viewing time was verified by interviews with parents and children plus an "after the study" intensive telephone interview check. These two groups were referred to as the "High TV exposure group" and "Low TV exposure group." The children were recruited by advertisements in the local daily newspapers, forty for each group. Surprisingly, it was not found difficult to locate children for either category. Each was paid \$5.00 for participating. The mean weekly TV exposure time of the "high" group was 42.0 hours. The mean weekly TV exposure time of the "low" group was 3.8 hours. The children in both groups represented a broad spectrum socioeconomically, in age, and other background characteristics and appeared as far as could be determined to represent a fairly

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normal sampling of youngsters. The low-TV watchers did not appear to be unique in any major or discernible way. TV was usually absent in their home, broken, or its viewing controlled by the parents.

Apparatus

A Narco Physiograph Six and related amplifiers and equipment were used to measure autonomic arousal. A stimulus film 14 minutes in length in 16 mm black and white was shown consisting of three segments: (a) a two-minute non-violent ski film narrated by Bill Stern, (b) a four-minute chase sequence from the W. C. Fields film "The Bank Dick," and finally (c) an eight-minute sequence from the Kirk Douglas film, "The Champion," depicting a brutal boxing match. The boxing film contained an equal amount of active violent content and non-violent material (between rounds). This made it possible to use each subject as "his own control" in that as the fight progressed from round to round we had alternating sequences of violent and non-violent images presented on the screen with the physiograph taking a continuous recording throughout the entire film of each subject's autonomic responses.

Procedure

Only one S was used per experimental session. The S was seated in a large comfortable arm chair and connected to the physiograph.

Blood volume pulse amplitude, one type of heart response data, was measured by attaching a photoelectric cell to the index fingertip inside of a small cuff. Changes in blood volume pulse amplitude were obtained by taking measurements of needle tracings from the diastolic trough to systolic peak at different points on the record. Thus changes in blood volume were measured easily at different points in time. A Narco Physiograph Six

with associated amplifiers was used to make these recordings. The blood volume changes, a measure of peripheral vaso-constriction (in percentage of change), were taken from the active violent and non-violent segments of the film.

Subjects Phase II

Forty-one male children between the ages of 7 and 14 divided into a group of 20 high TV exposure subjects and 21 low TV exposure subjects were recruited and experimented with in a manner similar to the Phase I research, except that two children were run at a time, one from the high and the other from the low TV exposure groups.

Apparatus

In addition to blood volume pulse amplitude, skin conductance (GSR) was also measured using a Narco Physiograph Six in the following manner:

Two 16 mm surface skin electrodes were attached to the palm of the subjects hand with a 4 cm separation between the electrodes, to measure skin conductance (GSR). The tracings from the physiograph were scored before the film, after the ski sequence, and for both inactive non-violent movie sequences as well as the active violent segments of the boxing match. Scores were secured for the number of responses (GSR), the actual count of individual "bumps" to individual film stimuli during a controlled passage of time. All responses which equalled or exceeded a minimum change of 500 ohms were counted. It was felt that responses of less than 500 ohms in magnitude were too small and could possibly be due to extraneous artifacts.²

In Table I where GSR responses of high and low television exposure

²We wish to express appreciation to Drs. David Raskin and William Prokasy who participated in a consultative capacity with regard to use of the physiograph and obtaining the skin conductance measures.

boys are compared it will be noted that there are no significant or practical differences in the "before the film" and "after the neutral ski film" conditions. Both groups respond essentially identically with regard to their GSR tracings. However, when both groups are exposed to filmed violence we do obtain significant differences in their responses (using the Mann Whitney test). The low TV exposure boys are significantly more aroused emotionally (if we operationally use GSR as an index of emotional arousal, which is consistent with its previous use and interpretation in the literature). We also note that during the non-violent segments of the boxing match that the low exposure boys tend to be somewhat more aroused (though not significantly) than the high exposure boys. Since the violent and non-violent segments of the film separated each other by mere seconds it would suggest that the low TV exposure boys were not able to "recover" as quickly from the emotional arousal of the violence witnessed. While the N's are relatively small, the data does suggest that a desensitization effect or possibly a habituation-to-violence effect has set in for the high exposure boys. Also of significance is the fact that in the Salt Lake area the film, "The Champion," has not screened commercially or on TV within recent years prior to the present research which would suggest a generalizing effect of violence viewing on TV. If children get desensitized or habituated to violence in a general sense, this would be quite different and have more serious implications than mere desensitization to a particular violence segment in a particular film.

In Table II the results of two studies using another index of autonomic arousal are presented. In this case we compare high and low TV exposure boys to filmed violence using a measure of blood volume pulse

amplitude (via a plythesmographic recording). The results are essentially identical to Table I, with the high TV exposure boys in both studies showing significantly less arousal autonomically which might be interpreted as some degree of desensitization to the filmed violence.

The results of these studies using two different measures of autonomic response all corroborate each other and suggest for the first time that some children who are heavy TV watchers may become to some degree habituated or desensitized to violence generally. These findings would suggest the need for further research and more concern about the role of television violence in the emotional and behavioral life of children.

Table I

Differences in Number of GSR Responses of High and Low
Television Exposure Boys While Watching Filmed Violence¹

Mann-Whitney U Analysis

Exp. Condition	Subjects	N ²	Mean No. GSR Responses	U	Signif. Level
Before film begins	High TV exposure boys ³	19	2.26	198.5	N.S.
	Low TV exposure boys ³	21	2.29		
At conclusion of "neutral" ski film but before violent film.	High TV exposure boys	19	1.89	141.0	N.S.
	Low TV exposure boys	19	2.58		
During selected non-violent segments of boxing film ⁴	High TV exposure boys	17	6.76	85.5	N.S.
	Low TV exposure boys	15	11.67		
During selected violent segments of boxing film	High TV exposure boys	17	13.88	22.5	2 < .05
	Low TV exposure boys	15	21.13		

¹The film was an 8 minute boxing sequence from The Champion with actor Kirk Douglas.

²The N's vary slightly in the various comparisons because the physiograph recording stylus "went off of the recording paper" during several recordings rendering the particular protocol unsuitable for scoring in the portion used.

³High exposure boys referred to an average viewing of TV for 42.0 hours per week for the previous two years. Low exposure boys referred to an average 3.0 hours weekly viewing of TV for the previous two years.

⁴A series of GSR readings were taken during the moments in the film where there was no actual physical violence being depicted such as between rounds, where there was a cutaway to a sportscaster commenting on the action, etc. These segments lasted only a few seconds.

Table II
Differences in Blood Volume Pulse Amplitude of High and Low
Television Exposure Boys While Watching Filmed Violence¹

Mann-Whitney U Analysis

	Exp. Condition	Subjects	N ²	Mean % Change ⁴	<u>U</u>	Significance Level
Study I	Non-violent vs. violent stimulus elements of boxing film ³	High TV expo- sure boys	36	8.6%	58	2 < .01
		Low TV expo- sure boys	31	17.1%		
Study II	Non-violent vs. violent stimulus elements of boxing film	High TV expo- sure boys	14	22.3%	60	2 < .05
		Low TV expo- sure boys	15	28.2%		

¹The film is an 8 minute boxing sequence from "the Champion" with actor Kirk Douglas.

²There was some attrition in N's from those originally studied due to miscellaneous reasons such as equipment malfunction, etc. Study I had 40 boys in each category, and Study II had 20 and 21 in each category.

³The boxing film had a mixture of violent segments (where the boxers are hitting each other) and non-violent segments (as between rounds or cutaway shots to a sportscaster commenting on the fight). A series of measures were taken for each boy-participant of his blood volume pulse amplitude during the violent segments and compared with the same thing during the non-violent segments. The percent change in amplitude was the measure of "arousal."

⁴There were no significant differences in blood volume pulse amplitude between experimental and control groups either before the movie, or after seeing a neutral ski film.

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